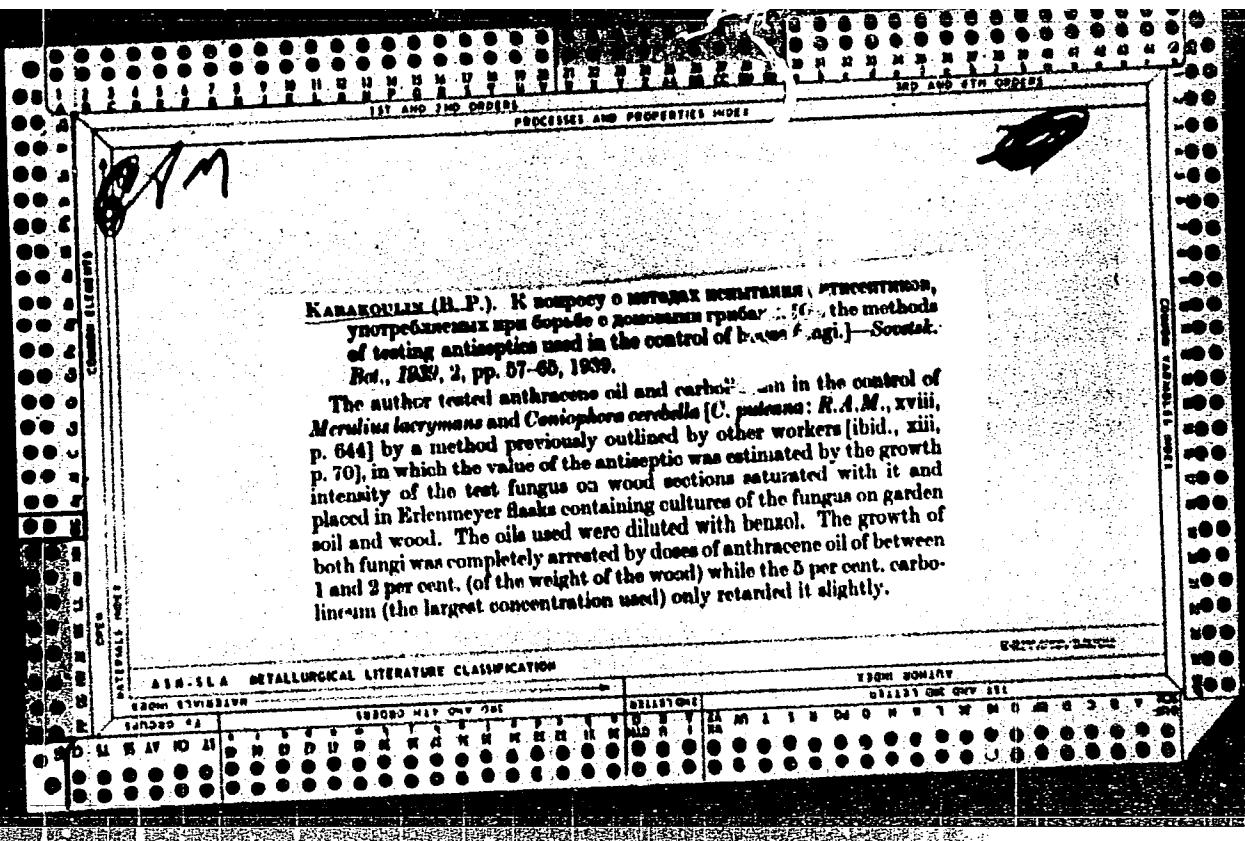


KARAKULIN, B.P.,
MME. A.P. BUDRINA, (Phytopathology) 340 pp., 132 figs., 1
graph, 5 maps, (State Publ. Off. Lit. Collect. & Co-op.
Farming), Leningrad, 1935.



KARAKULIN, B. P. and VASIL'YEVSKIY, N. I.

"Parasitic Imperfect Fungi", Part 2, Melanconiales, Moscow/Leningrad, Press and First Printing Plant of the Academy of Sciences USSR in Leningrad 680 pp, 1950.

KARAKULIN, G., prepodavatel'

Students' technological creativeness. Rech. transl 19 no.10:
46-47 O '60. (MIREA 13:11)

1. Gor'kovskoye rechnoye uchilishche.
(Inland water transportation--Technological innovations)

KARAKULIN, G., mekhanik-nastavnik

New harbor cranes. Rech.transp. 21 no.7:59-60 Jl '62.
(MIRA 15:8)
1. Volzhskoye ob'yedinennoye rechnoye parokhodstvo.
(Cranes, derricks, etc.)

KARAKULIN, G.

Repairing the steam boiler of a floating crane. Rech.
trap. 21 no.12:22 D '62. (MIRA 15:12)

1. Mekhanik-nastavnik sluzhby portov Volzhskogo
ob'yedinennogo rechnogo parohodstva.
(Boilers, Marine—Maintenance and repair)

KARAKULIN, G.

Standardization of clamshells. Rech. transp. 22 no.10:12-13
0 '63. (MIRA 16:12)

1. Mekhanik-nastavnik sluzhby portov Volzhskogo ob"yedinenennogo
technogo parokhodstva.

KARAKULIN, G.

Standard repair records for loading machinery. Rech. transp.
23 no.1:19 Ja '64. (MIRA 18:11)

1. Mekhanik-nastavnik sluzhby portov Volzhskogo ob'yedinenennogo
rechnogo parokhodstva.

L 59999-06	EWT(d)/EWP(c)/EWP(v)/T/EWP(k)/EWP(h)/EWP(l)	IJP(c)
ACC NR: AP6017071	(A)	SOURCE CODE: UR/0310/65/000/012/0018/0019
AUTHOR: <u>Karakulin, G. (Aspirant)</u>		27
ORG: <u>GIIVT</u>		25
TITLE: Increasing the <u>reliability</u> and endurance of <u>grab buckets</u>		
SOURCE: Rechnoy transport, no. 12, 1965, 18-19		
TOPIC TAGS: hoisting equipment, conveying equipment, crane		
ABSTRACT: The performance of grab buckets used by the <u>Ministry of the River Fleet</u> for various hoisting and conveying devices is discussed. There are over 3100 grab buckets of 70 different types in operation on construction sites, in harbors and on river craft, and an amount of 750000 rubles per year is spent on their maintenance and repair. Many types are not reliable in work and some of them are to be repaired every 4 hours. It is mentioned that 850 grab buckets of 0.75, 1.5 and 2.5 cu m capacity used in various harbors have a defective attachment of upper traverses and sheaves. An improvement in design illustrated by two diagrams is suggested by the author. Some repairs and improvements conducted by Gorkiy, Astrakhan' and other river ports are cited as examples for increasing the performance of grab buckets. Most of them are of the <u>plant "Gants"</u> design. The wear of bucket parts of a 1.6 cu m grab bucket is also mentioned. The use of various types of grab buckets on "Kayar" cranes in Saratov river port is criticized and the use of regular buckets of "Kayar" design equipped with improved sheaves is recommended. The		
Card 1/2	UDC: 621.86.063.004	

L 39999-66

ACC NR: AP6017071

2

"Kayar" grab bucket can handle 150000 tons of coal while the bucket of a 2.8 cu m capacity used by Gorkiy, Kazan' and Kiev river ports can handle only about 20000 tons before being repaired. Its design is criticized. The grab bucket is manufactured by the SSRZ im. 40-th October Anniversary Plant. Similar criticism is expressed on the grab buckets manufactured by PTO im. Kirov plant and used by Kuybyshev river port. However, the grab buckets of "Eleykhart" and Viley" cranes used in Kuybyshev and Kazan' river ports are mentioned as the most reliable ones. The organization of maintenance and repair service and the application of various treatment methods is reviewed and some improvements are suggested.

SUB CODE: 13/ SUBM DATE: none

Cont. 2/2 11b

10.1250

80892

S/126/60/009/06/025/025

E073/E335

AUTHORS: Smushkov, I.V. and Karakulin, I.Ye.

TITLE: X-ray Investigation of Ni-Cr Alloys

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 6,
pp 943 - 945 (USSR)

ABSTRACT: Brief communication on the study of Ni-Cr alloys within a wide range of concentrations, the aim of which was to determine the dependence of the lattice parameters of alloys on the concentration and also to elucidate the phase composition of the alloys. The specimens were prepared from carefully mixed powders of Cr and Ni, which were pressed and fused in a cryptol furnace under a layer of boron anhydride and were quenched from the liquid phase in oil. During subsequent heat treatment and X-ray investigation, discs of 6 mm dia, 4 to 5 mm high, cut from the central part of this casting, were used. The Cr content of the alloys amounted to 3, 20.6, 27.2, 44.5, 56.3 and 62.8 at.%. It was found that specimens with low Cr contents (3, 20.6 and 27.2%) had a cubic face-centred lattice in the quenched state, the parameter of which varies monotonously with the concentration. Subsequent

Card1/3

W

X-ray Investigation of Ni-Cr Alloys

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E073/E335

annealing at 600, 700 and 800 °C does not change the lattice parameter. The alloy with 44.5% Cr also had a cubic face-centred lattice in the quenched state. However, after annealing at 600 °C additional lines were detected on the X-ray diffraction patterns. Alloys with 56.3 and 62.8% Cr also had a cubic face-centred lattice in the quenched state. However, as a result of subsequent annealing the solutions decomposed into two phases with a cubic face-centred lattice and a cubic body-centred lattice, the latter with a lattice parameter approaching that of pure Cr. Thus, it is concluded that Ni-Cr alloys containing up to 62.8 at.% Cr represent homogeneous γ-solutions under the conditions pertaining during the experiments; this indicates that available diagrams of state are not entirely reliable and should be revised. Acknowledgments are made to B. Ya. Pines for his assistance and evaluation of the results and to M.P. Fuks, Docent, who made the chemical analysis of the alloys. There are 1 figure and 10 references, 3 of which are Soviet, 1 German and 6 English.

Card2/3

4

X-ray Investigation of Ni-Cr Alloys

80892
S/126/60/009/06/025/025
E073/E335

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im.
A.M. Gor'kogo (Khar'kov State University imeni
A.M. Gor'kiy)

SUBMITTED: December 23, 1959

Card 3/3

W

KARAKULIN, S.

Ten tons over the planned production. Mest.prom.i khud.promys.
2 no.8:28 Ag '61. (MIRA 14:9)

1. Direktor fabriki No.2, g.Kuznetsk, Penzenskoy oblasti.
(Penza Province--Roofing)

KARAKULINA, G.A., assistant

Designing double-lens uncemented objectives from tables. Izv.
vys. ucheb. zav.; geod. i aerof. no.4:115-122 '64.

(MIRA 18:2)
I. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i
kartografii. Rekomendovana kafedroy prikladnoy optiki.

GERSHGORN, M.A.; SVIRIDENKO, F.F.; KAZARNOVSKIY, D.S.; KRAVTSOVA, I.P.;
POPOVA, A.N.; FRADINA, M.G.; Prinimali uchastiye: IUKASHOV, G.G.;
RUDOL'SKIY, N.L.; SLEPKANEV, N.P.; PLISKANOVSKIY, S.T.; GOREAEV,
Ya.S.; BUL'SKIY, M.T. [deceased]; ARKHANGEL'SKIY, Yu.N.; SHAROV,
B.A.; VISTOROVSKIY, N.T.; RAKHANSKIY, B.I.; SAPOZHNIKOV, V.Ye.;
RYABININ, N.G.; KARAKULINA, R.R.; FADEYEVA, A.M.; ZVEREV, D.A.

Improving the production of high-strength rails by alloying
them with granulated ferrochromium in the ladle. Stal' 25
no.5:408-411 My '65. (MIRA 18:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov i zavod
"Azovstal'".

TETYAYEVA, M.B.; KARAKULINA, T.K.

Gastric motility in puppies following section of the vagus nerves. Fisiol. zhur. 51 no.10:1256-1260 O '65.

(MIRA 18:12)

I. Institut evolutsionnoy fiziologii i biokhimii imeni I.M. Sechenova AN SSSR, Leningrad. Submitted January 5, 1964.

KARAKULINA, T.T.; PROTASEVICH, Ye.S.

Effect of oxygen therapy on the functional state of the higher nervous centers. Trudy LSGMI 40:66-71 '58. (MIRA 12:8)

1. Fakul'tetskaya terapevticheskaya klinika Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. klinikoy - prof. A.A. Kedrov) i Kafedra normal'noy fiziologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. Yu.M. Uflyand).

(CENTRAL NERVOUS SYSTEM, physiology,

higher nervous activity, eff. of oxygen ther. of hypertension (Rus))

(OXYGEN, ther. use,

hypertension, eff. on higher nerv. activity (Rus))

(HYPERTENSION, ther.

oxygen, eff. on higher nerv. activity (Rus))

KARAKULINA, T.T.

Effect of reserpine on the functional state of the higher nervous
centers in patients with hypertension. Trudy ISGNI 48:192-196 '59.
(MIRA 14:2)

(RESERPINE) (NERVOUS SYSTEM)
(HYPERTENSION)

Karakulina, G.A.

PHASE I BOOK EXHIBITION
SOV/2065

314) Moscow. Institut inzhenerov geodezii, aerofotos "yemki i kartografiia".
trudy, vyp. 32 (Transactions of the Moscow Institute of Geodetic,
Aerial Survey and Cartographic Engineers, Nr 32). Moscow,
Geodesiya, 1958. 130 p. 1,000 copies printed.
Ed. of Publishing House: T. A. Shearerova, Tech. Ed.: V. V. Romanova;
Editorial Board: N. I. Dzadzhavili (Rep. Z.), V. I. Afanas'evich
Delyat', S. V. Bagratuni, M. Ya. Bobir, M. M. Volter,
A. I. Darav, S. V. Gelishev, P. S. Zakarov, G. Z. Lechuk, V. V. Perfilov,
N. I. Rodnitsky, N. D. Solov'yev, B. V. Shokin, and P. F. Shekine.

PURPOSE: This collection of articles is intended for geodesists,
photogrammeters, and cartographers.

COVERAGE: This issue of the Institute's Transactions is composed of
articles on geodetic surveying, photogrammetry, cartography and
geodesy. Surveying and geodesy are discussed in articles on
building line extensions, earthwork computations, precise trigonometric
triangulation, latitude determination, solution of trigonometric
equations and the geodetic interference computation; articles on
photogrammetry include the subheads photo rectification, spatial
triangulation and photo interpretation. Articles in the fields of
geodesy and cartography include: 1) a hundred maps of Czechoslovakia,
2) maps of the Trans-Osa Region of Moscow oblast, and 3) the
distribution of lakes in the East European Plains and the Kola-
Karelian Massif. References accompany individual articles.

TABLE OF CONTENTS:
SOV/2065

✓Bogololov, L. A. Basic Problems in Topographic Photo Interpretation of Tundra Landscapes	99
✓Nazarov, A. P. Methods of Solving Trigonometric Equations	107
✓Gorobtsev, V. M. Architectural Monuments --- The Former Home of I. T. Desidov, Presently Occupied by the Moscow Institute of Geodetic, Aerial Survey and Cartographic Engineers (Historical Sketch)	113
Karakulina, G. A. The Theory of the Standard Geodetic Interference Computer	125

AVAILABLE: Library of Congress

SC 1. Res. Section - MILITAR

7-28-59

CARD 6/4

KARAKULINA, G.A., assistant

Tabular method of designing double unsegmented lenses. Trudy
MIIGAIK no.49:91-103 '62. (MIRA 16:6)

1. Kafedra prikladnoy optiki Moskovskogo instituta inzhenerov
geodezii, aerofotos"zemki i kartografii.
(Lenses)

KARAKULINA, L.P.

Cytologic examinations in some skin diseases. Vest.ven. i derm. 30
no.5:11-14 S-0 '56.
(MLRA 9:12)

1. Iz kafedry kozhnykh bolezney (zav. - prof. S.Ya. Golosovker)
Leningradskogo pediatricheskogo meditsinskogo instituta (dir. - prof.
N.T.Shutova)
(SKIN DISEASES, diag.
cytol. exam. in various skin dis.)

ZVER'KOVA, F.A.; USHKOVA, M.N.; KARAKULINA, L.P.

"Skin diseases in children" By E.I. Gurvich, M.I. Olevskii. Reviewed
by F.A. Zver'kova, M.N. Ushkova, L.P. Karakulina. Vest. derm. i ven.
33 no.2:85-87 Mr-Ap '59. (MIRA 12:7)
(SKIN--DISEASES) (CHILDREN--DISEASES) (GURVICH, E.I.)
(OLEVSKII, M.I.)

KARAKULINA, T. T.

Chronaximetric studies in transplantation of the *musculus biceps femoris* to the patella. Trudy LSGMI 64:275-280 '61.
(MIRA 15: 7)

1. Kafedra fiziologii Leningradskogo sanitarno-gigienicheskogo meditsinskogo instituta. Zav. kafedroy - prof. Yu. M. Uflyand.

(CHRONAXIA) (FEMORAL MUSCLE—TRANSPLANTATION)
(PATELLA—SURGERY) (POLIOMYELITIS)

BARANOVSKIY, V., inzhener-polkovnik; KARAKUL'KO, I., inzhener-podpolkovnik

From tank ovens to reliable preheaters. Starsh.-serzh. no.1:32
Ja '61. (MIRA 14:7)
(Tanks (Military science)--Cold weather operation)

KARAKUL'KO, O., starshiy inzh.

Modernizing four-rope clam-shells for RMZ cranes. Rech.transp
21 no.4:12 Ap '62. (MIRA 15:4)

1. Gruzovoy uchastok Kuybyshevskogo portu.
(Cranes, derricks, etc.)

KARAKUL'KO, O., inzh.

Improve the maintenance of cranes. Rech. transp. 21 no.10:51
0 '62. (MIRA 15:10)

1. Kyubyshevskiy port.

(Cranes, derricks, etc.—Maintenance and repair)

KARAKUL'KO, O.

Changing ropes on R.M.Z. floating cranes. Rech. transp. 21
no.1:15 Ja '62. (MIRA 16:8)

1. Starshiy inzh. uchastka Kuybyshevskogo portu.
(Floating cranes—Maintenance and repair)

KARAKULOV, A.S., inzh.; KHALANGOV, G.K., inzh.; TSURKOV, B.A., inzh.

Production of trunnion plate forgings for steel-pouring ladles.
Mashinostroenie no.1:64 Ja-F '65. (MIRA 18:4)

KARAKULOV, Ishanbai

[With our Indian friends] U indiiskikh druzei. Alma-Ata,
Kazgosizdat, 1962. 220 p. (MIRA 17:3)

ACC NR: AN6032080

(W)

SOURCE CODE: UR/9034/66/000/079/0003/0003

AUTHOR: Karakulov, I. (Corresponding member AN KazSSR; Professor; Corresponding member AMN SSSR); Smirnov, S. (Doctor of epidemiology; Alma-Ata)

ORG: (Karakulov) AMN SSSR; AN Kazakhskaya SSR (AN Kazakhskoy SSR)

TITLE: Multifaceted drive against brucellosis

SOURCE: Meditsinskaya gazeta, no. 79, 30 Sep 66, p. 3, cols. 6-7

TOPIC TAGS: human ailment, brucellosis, bacteriology, medical research, epidemiology, infective disease, bacterial disease, disease therapeutics, animal disease, DISEASE INCIDENCE

ABSTRACT: Although its incidence has been reduced almost six times between 1952 and 1965, brucellosis remains one of the most widely distributed infective diseases in the Soviet Union. It is one of the most serious threats to the health of livestock and humans because of the chronic septicemia, allergic reactions, organ and tissue damage, and long recovery period resulting from the disease. A concentrated drive against brucellosis has been undertaken. Its primary task is to improve the health of farm animals and to eliminate epizootics. The latter is difficult because an epizootic begins with an infected animal's abortion. The microbes enter the soil,

Card 1/2

ACC NR: AN6032080

where they may be transferred to other domestic animals, humans, or intermediate hosts. The milk of infected animals also harbors the bacteria. Increased pasteurization of milk has played a great role in reducing the incidence of this disease in some areas. In the future, production of pasteurizing equipment will be increased. Mass vaccination of farm animals is now in progress and on the basis of past experience, is the single most effective measure for control of the disease.

[WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: none/

Card 2/2

ACC NR: AN6032080

(N)

SOURCE CODE: UR/9034/66/000/079/0003/0003

AUTHOR: Karakulov, I. (Corresponding member AN KazSSR; Professor; Corresponding member AN SSSR); Smirnov, S. (Doctor of epidemiology; Alma-Ata)

ORG: (Karakulov) AMN SSSR; AN Kazakhskaya SSR (AN Kazakhskoy SSR)

TITLE: Multifaceted drive against brucellosis

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where they may be transferred to other domestic animals, humans, or intermediate hosts. The milk of infected animals also harbors the bacteria. Increased pasteurization of milk has played a great role in reducing the incidence of this disease in some areas. In the future, production of pasteurizing equipment will be increased. Mass vaccination of farm animals is now in progress and on the basis of past experience, is the single most effective measure for control of the disease.

[WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: none/

Card 2/2

KARAKULOV, I.K.

Outline history of the study of brucellosis in Kazakhstan.
Izv. AN Kazakh. SSR. Ser. kraev. pat. no.5:5-28 '51. (MLRA 10:2)

(KAZAKHSTAN--BRUCELLOSIS)

KARAKULOV, I.K.

Diagram of the sources, possible ways and means of brucellosis
infection in man. Izv. AN Kazakh. SSR. Ser. kraev. pat. no.5:
39-46 '51. (MLRA 10:2)

(BRUCELLOSIS)

ZENKOVA, N.P.; KARAKULOV, I.K.

Some facts on preventive inoculation of man with living brucellosis
vaccine. Izv.AN Kazakh.SSSR Ser.kraev.pat. no.7:51-58 '51. (MLRA 9:8)
(BRUCELLOSIS—PREVENTIVE INOCULATION)

KARAKULOV, I. K., Prof., Corr. Member, Academy of Science of the Kazakh SSR;

"Epidemiology and Prophylaxis of Brucellosis," paper presented at the Joint Scientific Session hrld by AMS USSR and Min. of Pub. Health SSR on Problems of Regional Pathology, 20-25 Sept 54, Tashkent, page 77.

Attachment to B-98525, 30 Jul 56

In U. of Cal. Library

KARAKULOV, I. K.

USSR/Microbiology - Medical and Veterinary F-6
Microbiology

Abs Jour : Ref Zhur-Biologiya, No 1, 1957, 739

Author : I. K. Karakulov, N. V. Tamarovskaya,
and A. N. Sosunova

Inst :
Title : Experiment on the Liquidation of a
Focus of Brucellosis

Orig Pub : Zdravookhr. Kazakhstana, 1956, No 1,
35-38

Abstract : No abstract.

Card 1/1

KARAKULOV, I. K.

USSR/Microbiology - Medical and Veterinary
Microbiology

F-6

Abs Jour : Ref Zhur-Biologiya, No 1, 1957, 732

Author : I. K. Karakulov

Inst :

Title : On the State of the Solution of
Brucellosis Problems

Orig Pub : Zdravokhr. Kazakhstana, 1956, No, 12-16

Abstract : No abstract.

Card 1/1

KABAKULOV, I.K.; LINNETSKAYA, Yu.S.

Thirteenth All-Union Conference of Hygienists, Epidemiologists,
Microbiologists and Specialists in Infectious Diseases. Zdrav.
Kazakh. '16 no.11:45-46 '56. (MLR 10:1)
(EPIDEMIOLOGY--CONGRESSES)

KARAKULOV, I.K.; ZENKOVA, N.F.

Diagnostic value of some brucellins. Zhur.mikrobiol.epid. i immun.
27 no.6:57-58 Je '56. (MLRA 9:8)

1. Iz Instituta krayevoy patologii AN Kazakhskoy SSR.
(BRUCELLOSIS--DIAGNOSIS)

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KARAKULOV, I.K.; MERTSALOV, Ye.N; CHOKIN, A.P.

Certain aspects of prevention of infectious diseases in the Kazakh Republic. Zhur.mikrobiol.epid. i immun. 28 no.10:11-14 O '57.
(MIRA 10:12)

1. Iz kafedry epidemiologii Kazakhskogo gosudarstvennogo meditsinskogo instituta.

(COMMUNICABLE DISEASES, prevention and control,
in Russia (Rus))

KARAKULOV, I.K.

Basic problems in the control of zoonotic infections in Kazakhstan.
Vest. AN Kazakh. SSR 14 no.2:26-36 F '58. (MIRA 11:2)

1.Chlen-korrespondent AN FSSR.
(KAZAKHSTAN--EPIDEMIOLOGY)

KARAKULOV, I.K.

Studying the history of public health service in Kazakhstan.
Vest. AN Kazakh. SSR 14 no.9:14-20 S '58. (MIRA 11:11)

1. Chlen-korrespondent AN KazSSR.
(KAZAKHSTAN--HYGIENE, PUBLIC)

KARAFULOV, I.K.; LINETSAYA, Yu. S.

Society of microbiologists, epidemiologists and specialists in infectious disease in Kazakhstan. Zhur. mikrobiol. epid. i.immun. 29 no.10 r153-156 O '58. (MIRA 11:12)
(KAZAKHSTAN--MICROBIOLOGY--SOCIETIES)

KARAKULOV, I.K., prof., MERTSALOV, Ye.N., dots. BEKETAYEVA, A.M.

Aid of the department of epidemiology to public health agencies.
Sov.zdrav. 17 no.11:50-51 N'58 (MIRA 11:10)

1. Iz kafedry epidemiologii (zav. - prof. I.K. Karakulov) Kazakhskogo
meditsinskogo instituta (dir. - prof. I.S. Koryakin);
(PUBLIC HEALTH,
cooperation of med. schools with pub. health institutions
(Rus))

KARAKULOV, I. K., BORISOV, V. D., AMANSHULOV, S. A.

"Q-fever in Kazakhstan." p. 136

Desyatoye Soveshchaniye po parazitologicheskim problemam i prirodnocchagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

KARAKULOV, I.K.; LINETSKAYA, Yu.S.

Work of the Kazakh Society of Microbiologists, Epidemiologists, and
Specialists in Infectious Diseases in 1958. Zhur.mikrobiol.epid.i
immun. 30 no.10:156-157 O '59. (MIRA 13:2)
(KAZAKHSTAN--PUBLIC HEALTH SOCIETIES)

KARAKULOV, I.K., prof.; ZENKOVA, N.P., kand. med. nauk; BEKETAYEVA, A.M.
(Alma-Ata)

Prevention of brucellosis. Klin. med. 37 no.3:40-44 Nr '59.
(MIRA 12:7)

1: Chlen-korrespondent Akademii nauk Kazakhskoy SSR (for Karakulov)
(BRUCELLOSIS, prev. & control
in Russia (Rus))

BORISOV, V.D.; KARAKULOV, I.K.; AMANZHULOV, S.A.

Present and future conditions for the study of Q fever in Kazakhstan.
Zhur.mikrobiol.epid.i immun. 30 no.8:67-72 Ag '59. (MIRA 12:11)

1. Iz Kazakhskogo gosudarstvennogo meditsinskogo instituta i Insti-
tuta krayevoy patologii AN Kazakhskoy SSR.
(Q FEVER epidemiol.)

GREBENSHCHIKOV, Vasiliy Ofestovich. Prinimali uchastiye: GURCHENOK, I.F., SOLOV'YEVA, V.Ye.; SHTEIN, V.S. KARAKULOV, I.K., prof., doktor med. nauk, red.; NUGER, M.M., red.; SVICHKAR', N.N., tekhn.red.

[Public health and medicine in prerevolutionary Kazakhstan; bibliographic index to literature, 1731-1917] Zdravookhranenie i meditsina v dorevolutsionnom Kazakhstane; bibliograficheskii ukazatel' literatury, 1731-1917 gg. Alma-Ata, Gos.nauchn.med. biblioteka Kazakhstana, 1960. 288 p. (MIRA 13:11)

1. Direktor Gosudarstvennoy nauchnoy meditsinskoy biblioteki Kazakhstana (for Grebenschikov). 2. Gosudarstvennaya nauchnaya meditsinskaya biblioteka Kazakhstana (for Gurchenok, Solov'yeva, Shteyn). 3. Chlen-korrespondent Akademii nauk Kazakhskoy SSR (for Karakulov).

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(KAZAKHSTAN--BIBLIOGRAPHY--MEDICINE)

KARAKULOV, I.K.

Major center of medical thought in India. Zhur. mikrobiol. epid.
i immun. 31 no.7:154-156 J1 '60. (MIRA 13:9)
(BOMBAY--MEDICAL RESEARCH)

KARAKULOV, I.K.; MERTSALOV, Ye.N.; BEKETAYEVA, A.M.

Results of activities of the Department of Epidemiology of the
Kazakh Medical Institute. Zhur.mikrobiol.epid.i immmun. 31 no.9:
141-142 S '60. (MIRA 13:11)
(KAZAKHSTAN--EPIDEMIOLOGY)

MAKIROV, K.A.; KARAKULOV, I.K.

Current status of and prospects for controlling infectious diseases in Kazakhstan. Zhur. mikrobiol. epid. i immun. 32 no.7:12-19 Je '61.
(MIRA 15:5)

1. Iz kafedry epidemiologii Kazakhskogo meditsinskogo instituta.
(KAZAKHSTAN--COMMUNICABLE DISEASES--PREVENTION)

POSTRIOHEVA, O.V.; AMANZHULOV, S.A.; BORISOV, V.D.; KARAKULOV, I.K.

Spread of Q fever in the Virgin Territory. Zdrav. Kazakh. 21 no.8:
50-54 '61. (MIRA 14:9)

1. Iz Instituta krayevoy patologii AN Kazakhskoy SSR i kafedry
epidemiologii Kazakhskogo meditsinskogo instituta.
(VIRGIN TERRITORY—Q FEVER)

KARAKULOV, I.K.

Paths of the spreading of Q fever and measures for its control.
Vest. AN Kazakh. SSR 20 no.5:31-39 My'64 (MIRA 18:1)

1. Chlen-korrespondent AN KazSSR i AMN SSSR.

L 25766-66 EMT(1)/T JK

ACC NR: AP6016363

SOURCE CODE: UR/0016/65/000/004/0053/0057

32

B

AUTHOR: Karakulov, I. K.ORG: Institute of Regional Pathology, AN KazSSR (Institut krayevoy patologii AN KazSSR); Alma-Ata Medical Institute (Alma-Atinskiy meditsinskiy institut)TITLE: Principal results of an investigation of the epidemiology of Q-fever in Kazakhstan

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 4, 1965, 53-57

TOPIC TAGS: epidemiology, Q fever, commercial animal, animal disease

ABSTRACT: Various aspects of the epidemiology of Q-fever in Kazakhstan have been subjected to a many-sided study since 1956 by the Institute of Regional Pathology, Academy of Sciences Kazakh SSR; the Alma-Ata Medical Institute; and the Rickettsiopsos laboratory of the Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR. It was established that the incidence of Q-rickettsiosis is higher in Kazakhstan than anywhere else in the USSR. The principal factor in human infection is contact with farm animals and animal products (meat, etc.). Infection of sheep and goats is more frequent than that of cattle. Camels, mules, donkeys, dogs, and cats are susceptible to Q-fever. Rodents, ticks, birds (sparrows, crows, swallows, etc.), and insects (gadflies) were found to play a role in the epizootiological processes of transmission of Q-rickettsiosis and its maintenance in natural reservoirs. Rickettsia burnetii were isolated from many species of animals for the first time in Kazakhstan. The occurrence of Q-fever in Kazakhstan constitutes a major problem which must be faced by human and veterinary medicine. From the medical standpoint, the unwillingness of local

UDC: 616.981.717-036.22(574)

L 25766-66

ACC NR: AP6016363

herdsmen and farmers to seek medical aid when they are infected with Q-fe^v
and the unfamiliarity of medical specialists with the disease make control of
Q-fever in Kazakhstan more difficult. [JPRS]

SUB CODE: 06 / SUBM DATE: 07Oct64 / ORIG REF: 015

Card 2/2 CC

KARAKULOV, I.K., KALZHUKOV, T.K.

System of compound antitubercular measures. Vest. MG Kazakh.
SER 21 no.10:68-77 O '65.

(MJRA 18:12)

1. Chlen-korrespondent AMN SSSR i AN KazSSR (for Karakulov).

KARAKULOV, N.K.; KOSTINA, K.A.; LINETSKAYA, Yu.S.; CHOKIN, A.R.

Achievements in the campaign against infectious diseases in
Soviet Kazakhstan. Zdrav.Kazakh. 17 no.10/11:27-32 '57.
(MIRA 12:6)

(KAZAKHSTAN--COMMUNICABLE DISEASES)

KARAKURCHI, M. I.

Karakurchi, M. I.

"Investigation of the Strength and Elastic Properties of Separating Walls Made of Hollow Ceramics." Academy of Architecture Ukrainian SSR. Sci Res Inst of Structural Engineering. Kiev, 1955. (Dissertation for the Degree of Candidate in Technical Sciences.)

SO: Knizhnaya Letopis', No. 27, 2 July 1955

KARAKURCHI, M.I., kandidat tekhnicheskikh nauk.

Strength of hollow-stone separation walls; experimental
investigations. Nov. v stroi. tekhn. no.7:83-100 '55.

(MLRA 9:11)

1. Nauchno-issledovatel'skiy institut stroitel'noy tekhniki
Akademii arkhitektury Ukrainskoy SSR.
(Walls) (Hollow brick, tile, etc.)

KASPIN, L.A., kand.ekonom.nauk; PAL'M, I.S., starshiy nauchnyy sotrudnik;
KHORIKOV, A.N., starshiy nauchnyy sotrudnik; SHEVCHUK, Yu.I.,
starshiy nauchnyy sotrudnik; AKSENOK, D.G., inzh.; EL'GORT, Ye.G.
Prinimali uchastiye: KARAKURCHI, M.I., kand.tekhn.nauk;
KUCHERENKO, K.R., kand.tekhn.nauk; PEDAN, M.P., nauch.sotr.; POPOV, V.Ye.,
nauchn.sotr.; GINZBURG, S.M., inzh.; SLINKO, B., red.; ZELENKOVA, Ye.,
tekhn.red.

[Economic aspects of the construction of four- and five-story
apartment buildings of large blocks of brick] Ekonomika vospovede-
niia 4-5 etazhnykh zhilykh zdanii iz krupnykh kirkichnykh blokov.
Kiev, Gos.izd-vo lit-ry po stroit. i arkhit. USSR, 1960. 112 p.
(MIRA 14:4)

1. Akademiya stroitel'stva i arkhitektury USSR. Institut organi-
zatsii i mekhanizatsii stroitel'nogo proizvodstva. 2. Sektor
ekonomiki stroitel'nogo proizvodstva Nauchno-issledovatel'skogo
instituta organizatsii i mekhanizatsii stroitel'nogo proizvodstva
Akademii stroitel'stva i arkhitektury USSR (for Kaspin, Pal'm,
Khorikov, Shevchuk, Aksenov, El'gort). 3. Nauchno-issledovatel'skiy
institut konstruktsiy (for Karakuchi, Kucherenko). 4. Glevkiyevstroy
(for Ginzburg), 5. Nauchno-issledovatel'skiy institut stroitel'nykh
materialov (for Pedan, Popov).
(Building, Brick)

STEFANOVICA, Djordja; KARAKUSEVIC, Milice

Junipers communis and its components. Arh. farm., Beogr. 4 no.4:
114-121 Aug 54.

1. Hemiski Institut Prirodno-matematickog fakulteta. Beograd.
(PLANTS
Juniperus communis, chem. components)

YUGOSLAVIA

Liljana ZEMLJIC, Milica KAPABUSINIC, Ivan KONSTANTINOVIC, and Milos MILJANIC, Institute of Balneology and Climatology (Balneo-klimatoloski institut) People's Republic of Serbia (NR/Srpska Narodna Republika/ Srbija) Director (Direktor) Docent Dr Vlastimir GODIC, Belgrade.

"Effects of Drinking Mineral Water from the Spa Bukovicka Banja onto Renal Water and Electrolyte Excretion."

Belgrade, Srpski Arhiv za Celokupno Lekarstvo, Vol 60, No 9, Sept 1962; pp 830-838.

Abstract (German summary modified): Study in 6 men aged 25 to 35 during 70 days: drinking mineral water, excretion of K, Na, Cl, Ca, Mg and F; water; comprehensive statistical treatment. Diuresis and phosphaturia increased. Discussion. Eight tables, 2 Yugoslav and 2 French references.

11/1

ZECEVIC, Ilijana; KARAKUSEVIC, Milica; KONSTANTINOVIC, Ivan;
MILJANIC, Milos

Effect of drinking of Bukovicka Banja mineral water on the
renal elimination of water and electrolytes. Srpski arh. celok.
lek. 90 no. 9:833-838 S '62.

1. Balneoc-klimatoloski institut NR Srbije u Beogradu Direktor:
doc. dr. Vlastimir Godis.
(WATER ELECTROLYTE BALANCE)
(MINERAL WATERS) (DIURESIS)

5

9.4300 (1043,1137,1143)

20776

S/181/61/003/003/001/030
B102/B214

AUTHORS: Karakushan, E. I. and Stafeyev, V. I.

TITLE: Magnetic diodes

PERIODICAL: Fizika tverdogo tela, v. 3, no. 3, 1961, 677-686

TEXT: The present paper gives a theoretical study and the results of experimental investigations of the effect of a magnetic field on the volt-ampere characteristics of semiconductor diodes. This effect has been studied once before (Ref. 1: Radio a. Telev. News, July, 10, 1952) and found to be very small (Ge diodes). Stafeyev has, however, shown that, under certain conditions, there exists a large dependence of the forward current on the magnetic field in the case of "long" diodes. Now, first the effect of the field on minority carriers, particularly on their mobility, is studied considering the effect of surface recombination (Suhl effect) to be negligible. The first effect of the magnetic field is that the carrier mobility decreases, as a result of which the resistivity of the semiconductor increases. If it is as-

Card 1/10

20776
S/181/61/003/003/001/030
B102/B214

Magnetic diodes

Assumed that $\mu_p = \mu_n$, one has $\frac{1}{q} \frac{dq_0}{dH} = - \frac{1}{\mu_p} \frac{d\mu_p}{dH}$. Another effect of the magnetic field is to decrease the diffusion length of minority carriers: $\frac{1}{l_d} \frac{dl_d}{dH} = \frac{1}{2\mu_p} \frac{d\mu_p}{dH}$; accordingly, the minority carrier distribution is determined by $p - p_0 = p_0(e^{\frac{qV_0}{L}/kT} - 1) \operatorname{sh} \frac{d-x}{L} / \operatorname{sh} \frac{d}{L}$, where $L \approx l_d$ and V_0 is the potential drop in the region of the volume charge of the p-n junction. The magnetic field thus affects not only the mobility of minority carriers (diode) but also their concentration. The first part of the paper is concerned with a study of the effect of the magnetic field on the reverse current and, in the case of low (a) and high (b) injection levels, on the forward current. In case (a) one has:

Card 2/10

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B102/B214

Magnetic diodes

$$I = I_s \left(e^{\frac{q(V - kT)}{kT}} - 1 \right), \quad (4)$$

$$R_T = \rho_0 d \left[1 + (b-1) \frac{L}{d} \operatorname{th} \frac{d}{L} \right],$$

$$I_s = \frac{kT \mu_p p_0}{L} \operatorname{cth} \frac{d}{L}$$

(I - current density, V - voltage applied to the diode, ρ_0 - resistivity of the semiconductor, d - its thickness in the diode, L - effective diffusion length; in case (a) $L = l_d$; $b = \mu_n / \mu_p$ - mobility ratio, τ_p - carrier life-time, q - electron charge, p_0 - equilibrium concentration of minority carriers (holes in the n-type semiconductor considered)). For $d/L \ll 1$ one has $\frac{1}{I} \frac{dI}{dH} \approx \frac{1}{q \rho_0} \frac{d \rho_0}{dH}$; for thin diodes when $d/L \gg 1$ ($d/L > 2$):

$$\frac{1}{I} \frac{dI}{dH} = -\frac{1}{2} \left\{ 1 + \frac{\frac{q(I - I_s)}{kT} R_T}{1 + \frac{q(I - I_s)}{kT} R_T} \right\} \frac{1}{p_0} \frac{dp_0}{dH}. \quad (7)$$

Card 3/10

20776
S/181/61/003/003/001/030
B102/B214

Magnetic diodes

In case (b) $I = I_0 e^{qV/CkT}$ and $C = 2(b+ch\frac{d}{L})/(b+1)$. For $d/L < 1$:

$I \approx 2 \frac{kT \mu n_i}{d} e^{\frac{qV}{2kT}}$ (for $H = 2800$ oe, $\Delta q_0/q_0 \approx 0.4-0.7\%$). For $e^{d/L} \gg 1$ one has:

$$\frac{1}{I} \frac{dI}{dH} = -\frac{d}{2L} \left(\ln \frac{I}{I_0} - 1 + \frac{L}{d} \right) \frac{dp_0}{pdH}. \quad (15a)$$

or for large currents:

$$\frac{1}{I} \frac{dI}{dH} \approx -\frac{d}{2L} \ln \frac{I}{I_0} \frac{1}{p_0} \frac{dp_0}{dH} = -\frac{d}{2L} \frac{qV}{CkT} \frac{1}{p_0} \frac{dp_0}{dH}. \quad (16)$$

If $d/L > 4$, one has

$$\frac{I_0}{I_H} \approx e^{-\frac{d}{L_0} \frac{L_H}{L_H}} e^{(b+1) \frac{V}{kT}} \left(-\frac{d}{L_0} - \frac{d}{L_H} \right) \quad (18a)$$

From the latter it follows, for example, for $d/L = 6$ and $I = 10^3 I_0$ that a magnetic field which lowers L by 20% reduces the forward current 40-50

Card 4/10

20776
S/181/61/003/003/001/030
B102/B214

Magnetic diodes

times. The second part of the paper gives experimental results (study of the H dependence of the diode current for $\rho_0 = 50 \text{ ohm}\cdot\text{cm}$, $L = 0.5 \text{ mm}$, diameter of the p-n junction: 0.9 mm, $d = 2.5 \text{ mm}$; p-n junction due to indium, ohmic contact: tin). The specimens were cylinders of different heights given in mm (for example, diode T-3.0: cylinder 3.0 mm high). Results are shown in Figs. 1 - 3 and in a table. Finally, the third part of the paper gives a report on a study of magnetic diodes. Preliminary investigations had shown that diodes of very high magnetic sensitivity can be prepared. The conditions required are high current density and large d/L . Diodes whose schematic representation is given in Fig. 5 were prepared with particular regard to good heat dissipation. Fig. 6 shows the direct branches of the volt-ampere characteristics of such a diode (D-3.0) for different magnetic fields. With a field, for example, of $H = 119,300 \text{ oe}$, the forward current in the diode changes by a factor of 200. From the volt-ampere characteristic at $H = 0$ it is found that $C_0 = 104$ and $d/L = 5.7$. These diodes were made of the same material as the T-diodes. Ye. A. Gamliko is thanked for help in the preparation of the specimens. There are 7 figures, 1 table, and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc.

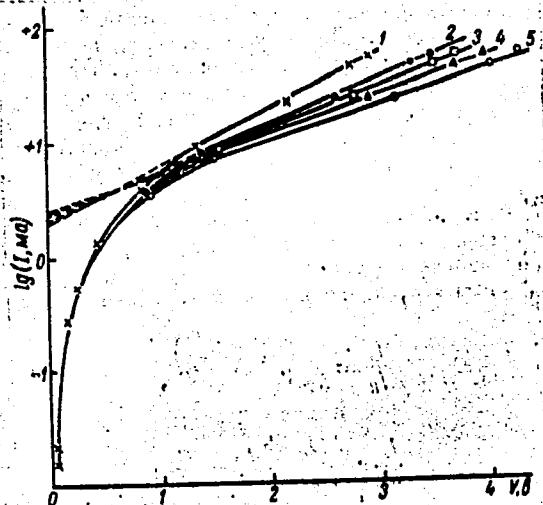
Card 5/10

20776

S/181/61/003/003/001/030
B102/B214

Magnetic diodes

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut im. A. F. Ioffe
AN SSSR (Leningrad Institute of Physics and Technology imeni
A. F. Ioffe AS USSR)



SUBMITTED: January 30, 1959

Legend to Fig. 1: 1) $H = 0$, 2)
 $H = 2000$ oe, 3) $H = 3000$ oe,
4) $H = 4000$ oe, 5) $H = 5000$ oe.

Card 6/10

94,7700 (1137, 1144, 1385)

25690
S/181/61/003/007/012/023
B102/B214

AUTHORS: Karakushan, E. I., and Stafeyev, V. I.

TITLE: Magnetic diodes with large area

PERIODICAL: Fizika tverdogo tela, v. 3, no. 7, 1961, 2031-2040

TEXT: A new semiconductor device, the magnetic diode, whose forward current depends strongly on the strength of the magnetic field, was described and studied in earlier papers of the authors (FTT, I, 841, 1959; FTT, III, 677, 1961; ZhTF, XXVIII, 1631, 1958). In the present paper, further peculiarities in regard to the structure and properties of such diodes are given. First of all, the magnetic sensitivity of these diodes is discussed, and it is shown that this sensitivity is substantially higher than what would be expected from the theory. The high magnetic sensitivity is above all, due to the fact that the magnetic field decreases the diffusion length L, which leads to a reduction in the number of nonequilibrium carriers and to a significant increase of the resistance of the semiconductor layer. There is a charge redistribution between this layer and the p-n junction; the decrease of the potential

Card 1/6

25690
S/181/61/003/007/012/023
B102/B214

Magnetic diodes with large area

at the p-n junction causes a decrease of the injection and leads to a new charge redistribution. By this process, the initially insignificant change in mobility leads to a significant change in the forward current. Equations are derived for the current and voltage sensitivities, the symbols used being those of the earlier papers. In the following, the authors calculate the optimum thickness of the magnetic diode:

$d/L = \frac{1}{2} \ln [2(q/kT)^2(b+1)^2 q_0 L / Y_1 Y]$; $Y = 2d/L - 1$. Now, magnetic diodes with large area are investigated, i. e. those whose p-n junction has an area of $\sim 0.6 \text{ cm}^2$ and whose lateral surface areas are negligible. Fig. 1 shows schematically such a diode with water cooling. The thickness of the semiconductor is chosen for convenience as $d=5L=3\text{mm}$, and the resistivity of the n-type semiconductor (starting material) between 40 and 50 $\text{ohm}\cdot\text{cm}$. The p-n junction is formed by infusion of indium, and the ohmic contact by infusion of tin (in a hydrogen atmosphere). Table 1 gives the measured values of the characteristic parameters of several types of such diodes. In the following, the section-type of magnetic diodes is briefly discussed. Fig. 6 shows the view of such a diode; the characteristics of some types of this kind are given in Table 2. The most important results of the

Card 2/6

Magnetic diodes with large area

25690
S/181/61/003/007/012/023
B102/B214

investigations are the following: In magnetic diodes with sufficiently large cross sections one must take into account the curvature of the current lines due to which the effective distance between the p-n junction and the ohmic contact becomes larger. Under certain conditions, $\Delta d/d$ can exceed $\Delta L/L$ by 10 to 15 times. The magnetic sensitivity of both kinds of magnetic diodes exceeds the theoretical value by a large amount if only the change of the diffusion length is taken into consideration. The change in the current $\Delta I/I_H$ of the magnetic diodes in the magnetic field reaches a value 100 times as large as the corresponding change of the resistance $\Delta \rho_0/\rho_0$ of the single crystal. In the whole range of H investigated, $\Delta I/I_H$ varies in proportion to H. The rise and fall of the voltage at the diode also follows the same law for direct current. In a field of 3000 gauss, the current strength is changed 2-4 times, while $\Delta \rho_0/\rho_0 \approx 2\%$. There are 6 figures, 2 tables and 3 Soviet-bloc-references.

ASSOCIATION: Fiziko-tehnicheskiy institut im. A. F. Ioffe AN SSSR
Leningrad (Institute of Physics and Technology imeni A. F.
Ioffe, AS USSR, Leningrad)

Card 3/6

KARAKUSHAN, E.I.; STAFYEV, V.I.

Magnetodiodes with large surfaces. Fiz.tver.tela 3 no.7:2031-
2030 Jl '61. (MIRA 14:8)

1. Fiziko-tehnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad.
(Semiconductors—Magnetic properties) (Diodes)

5/181/63/005/004/002/047
S102/B186

AUTHORS: Vorob'yev, L. Ye., Karakushan, E. I., and Stafeyev, V. I.

TITLE: Effect of a magnetic field on the carrier distribution in the body of a magnetodiode

PERIODICAL: Fizika tverdogo tela, v. 5, no. 4, 1963, 982 - 989

TEXT: The experiments described were made on large-area magnetodiodes with uniform (Figs. 4, 5) or with subdivided (Fig. 10) p-n junctions (Ge). The diode was placed between the pole pieces of a magnet which were provided with conical openings (cf. Fig. 1). An incandescent lamp was used as light source ($1.8 - 2.5\mu$) its light pulses (4 msec) being synchronized with the current pulses sent through the diode. In this wavelength range the absorption coefficient was proportional to the free carrier concentration, the reflection coefficient was 35%. The high magneto-sensitivity of these diodes is due to the fact that the magnetic field alters the spatial distribution of the non-equilibrium carriers in the body of the semiconductor. The changes arise both along and transverse to the current lines and were determined from the light absorption. The results are shown in form of graphs. There are 10 figures and 1 table.
Card 1/4

Effect of a magnetic field on...

S/181/63/005/004/002/047
B102/B186

ASSOCIATION: Fiziko-tehnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: September 24, 1962

Fig. 1. Optical arrangement. Legend: Δ - Magnetodiode, NS - magnet, $\S_{1,2,3}$ - mirrors, PbS - photoresistor as receiver, Π - modulator, S - spiral; (1) to the oscilloscope.

Fig. 2. Shape of pulse received by the PbS. Legend: t_1 start of light pulse, t_2 start of current pulse, t_3 end of light pulse, t_4 end of current pulse.

Fig. 4. Non-equilibrium carrier distribution along the p-n junction with and without magnetic field for $x=1.05$ and $x=0.15$ mm. Legend: $I \approx 10$ a, $B = 7500$ gauss; (1) B_+ , (3) B_- , (2) $B=0$.

Card 2/4

Effect of a magnetic field on...

S/181/63/005/004/002/047
B102/B186

Fig. 1

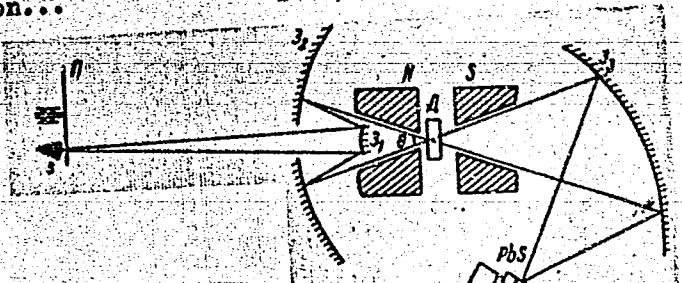
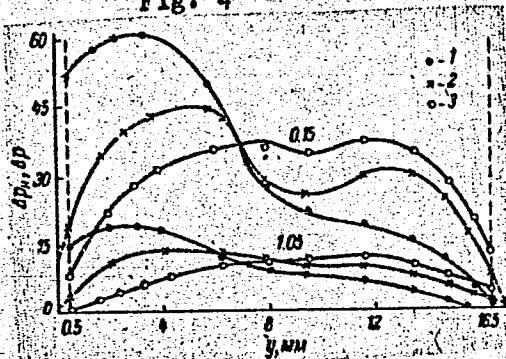


Fig. 4



Card 3/4

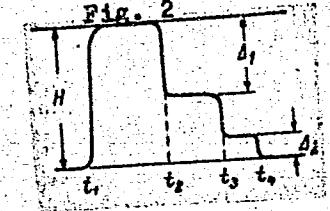
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PBS

Fig. 2



SONDAYEVSKIY, V. P.; KARAKUSHAN, E. I.; STAFEYEV, V. I.

"Investigation of Ge doped by Au in high electric fields."

report submitted for Intl Conf on Physics of Semiconductors, Paris, 19-24
Jul 64.

STAFEYEV, Vitaliy Ivanovich; KARAKUSHAN, Emiliya Ivanovna;

[Magnetodiodes; semiconductor devices with high magnetic sensitivity] Magnitodiody; poluprovodnikovye pribory s vysokoi magnitochuvstvitevnost'iu. Leningrad, Leningradskii dom nauchno-tehnicheskoi propagandy, 1964. 33 p.
(Poluprovodniki, no.13) (MIRA 17:9)

L 19057-65 EWT(1)/EWG(1)/EEC(k)-2/T/EEC(b)-2/EWA(h) Pm-4/Pz-6/Peb IJP(c)/
ASD(a)-5/RAEM(c)/AFWL/ESD(t)/ESD(c)/ESD(dp)
ACCESSION NR: AP4040913 S/0109/64/009/006/1034/1039

AUTHOR: Karakushan, E. I.; Stafeyev, V. I.; Shtager, A. P.

TITLE: Two-base magnetodiode ²⁵

SOURCE: Radiotekhnika i elektronika, v. 9, no. 6, 1964, 1034-1039

TOPIC TAGS: semiconductor, semiconductor device, semiconductor diode,
double base diode, magnetodiode, double base magnetodiode

ABSTRACT: The magnetodiode is characterized by $d/L = 3$ to 5, while in conventional diodes $d < L$; here, d is the distance between the p-n junction and the ohmic contact and L is the diffusion-displacement length. The double-base magnetodiode can be designed with a sensitivity to a magnetic field higher than that of the conventional magnetodiode. Symmetrical and nonsymmetric double-base magnetodiodes were prepared from n-Ge with a resistivity of 40 ohm-cm. These characteristics were measured: (1) Base-to-base: current vs. voltage at

Cord 1/2

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ACCESSION NR: AP4040913

0, 2, 3, 4, 5, and 6 kgauss; base-to-base resistance, breakdown voltage, breakdown current, and minimum voltage vs. magnetic flux density; (2) Emitter-to-principal-base: current vs. voltage at the above gauss values in both symmetrical and nonsymmetrical diodes; breakdown voltage, cutoff voltage, residual voltage, and residual resistance vs. magnetic flux density. For better characteristics, the use of a high-resistivity and high carrier-mobility material, such as GaAs, is recommended. Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 05Oct62

ENCL: 00

SUB CODE: EC

NO REF SOV: 007

OTHER: 001

Cord 2/2

ACCESSION NR: AP4048888

S/0109/64/009/011/2027/2030

AUTHOR: Karakushan, E. I.; Stafeyev, V. I.

B

TITLE: Magnetodiodes with negative resistance

SOURCE: Radiotekhnika i elektronika, v. 9, no. 11, 1964, 2027-2030

TOPIC TAGS: L diode, n type germanium, magnetic sensitivity, magnetodiode

ABSTRACT: The results of investigations of negative resistance in L-diodes are discussed. The specimens used were made from n-type Ge ($\rho \sim 50 \text{ ohm.cm}$). In the initial material, conductivity was determined exclusively by the ionized-impurity content, whose concentration was much higher than that of the surface recombination centers; the dependence of current and discontinuity voltage on the magnetic field became significant only after the occurrence of discontinuity (see Fig. 1 of the Enclosure). At room temperature, the forward current in negative-resistance diodes may drop by more than half in a field of 600 gs, while sensitivity may exceed 4 mv/gs. Investigations at 77K showed a degree of magnetic sensitivity in air diodes which, under identical conditions, was much higher than that of the initial Ge single crystals. At this temperature, the variation in voltage in a diode with a field of 20 gs and a current of 90 mamp was 0.3 v, which corresponds to a magnetic

Cord 1/3

ACCESSION NR: AP4048888

sensitivity of 15 mv/gs. Moreover, these investigations have demonstrated anomalous volt-ampere characteristics in diodes which were more sensitive to the magnetic field. In the absence of a magnetic field, the volt-ampere characteristics had two regions of negative resistance and both current and voltage ambiguity. After the discontinuity point, saturation accompanied by a decrease in current and an increase in voltage occurred; these phenomena do not fit the usual L-diode model. The authors attempt to explain this anomalous behavior by suggesting that the surface recombination rate at first decreases when there is an increase in nonequilibrium carrier concentration; at high currents, this rate either starts to increase or the volume lifetime begins to decrease. They admit, however, that their suggestion requires further study. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 29Jul63 ENCL: 01 SUB CODE: EC

NO REF SOV: 007 OTHER: 004 ATD PRESS: 3150

Card 2/3

ACCESSION NR: AP4048888

ENCLOSURE: 01

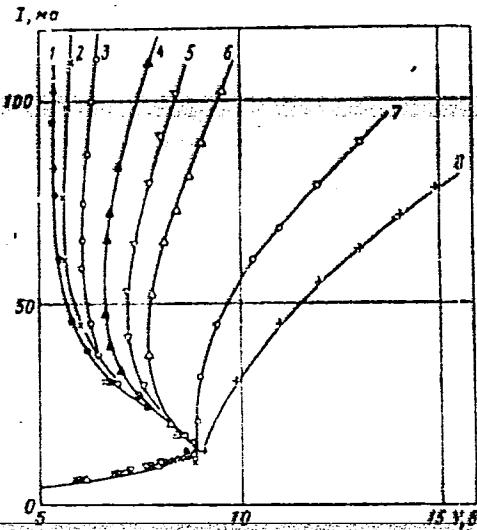


Fig. 1. Forward volt-ampere characteristics of a magnetodiode at 77K

1 - Zero field; 2 - 20 gs; 3 - 40 gs;
4 - 60 gs; 5 - 80 gs; 6 - 100 gs; 7 - 150 gs;
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